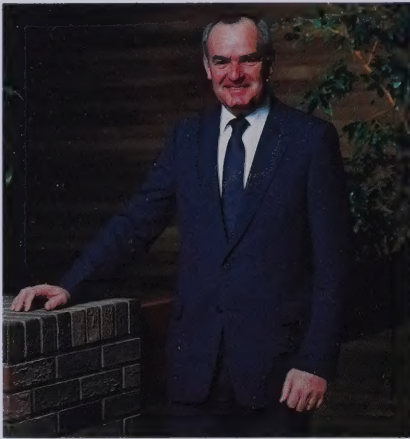


**Banister**  
Pipelines





**E**stablished in 1948, Banister Pipelines is a founder of the pipeline construction industry in Canada.

*During forty years of operations, our constant aim has been to serve our clients' needs to the very best of our ability. We take pride in our role in ensuring that pipelines remain the most efficient, economical, and safe method of transporting energy across the nation.*

*We have met the challenge of developing techniques for construction of pipelines under the severest of climatic and geographic conditions. Our expertise and experience have been applied to projects throughout North America and overseas.*

*Whatever the need, whatever the location, we can contribute to the success of our clients' pipeline construction projects.*

*Our goal has always been perfection.  
Our reputation is performance.*

**R.F.C. Marriott**  
President  
Banister Pipelines

**Cover left:**  
*Lowering in 914 mm (36-inch) natural gas line.*

**Cover right:**  
*Hand signal directs machine operator.*



**A** pioneer in pipeline construction, Banister Pipelines remains a leader in the industry. Specializing in large-diameter, cross-country pipelines, Banister also constructs distribution and gathering systems, installs pipeline river

crossings, performs hydrostatic testing, and upgrades existing pipelines.

Banister was founded in 1948 and has built pipelines for all types of services in Canada, the United States, and the Middle East. More than 45,000 kilometres (28,000 miles) of cross-country pipelines have been completed, as well as thousands of kilometres of small-diameter gathering and distribution systems.

Banister has worked in geographic and climatic conditions ranging from Arctic muskeg to the granite of the Canadian Shield, and from Louisiana swampland to the deserts of the Middle East. With this range of experience, specialized equipment, and trained personnel, Banister Pipelines is ready to meet pipeline construction challenges worldwide.



*Bending crew at work on natural gas pipeline project in Ontario for TransCanada PipeLine.*



Originally established in Alberta, Banister Pipelines maintains its head office in Edmonton. Over the years Banister has been involved in virtually every important pipeline project in Canada. Banister built major portions of the cross-Canada systems owned by TransCanada PipeLines and Inter-provincial Pipe Line. In 1980-1981, part of the western prebuild of the

Alaska Highway Gas Pipeline was completed by Banister in southern Alberta.

The diversity of Canada's geography ensures that every pipeline presents its own challenges. Banister has completed important projects in the Rocky Mountain region, the prairies, the Canadian Shield, and the Arctic. Clients include Westcoast Transmission,

Nova, An Alberta Corporation, Trans Mountain Pipe Line, Union Gas, Trans Quebec and Maritimes Pipelines, and Gaz Inter-Cite Quebec Inc.

Inventiveness and versatility have always been key factors in Banister's success. As a Canadian construction contractor, the company has had to overcome not only a wide diversity of terrain and soil conditions, but also the harshness of northern winters. It was in the early 1960's that Banister discovered a way to turn cold weather into a powerful ally.

Construction of pipelines in northern regions inevitably involves crossing large tracts of muskeg, which is virtually impassable to heavy equipment in summer. By developing techniques for building pipelines in cold temperatures when the ground is frozen, Banister overcame the almost insurmountable difficulties of summer work in such areas. Many of the methods developed and perfected by Banister for cold-weather pipeline construction have become industry standards.



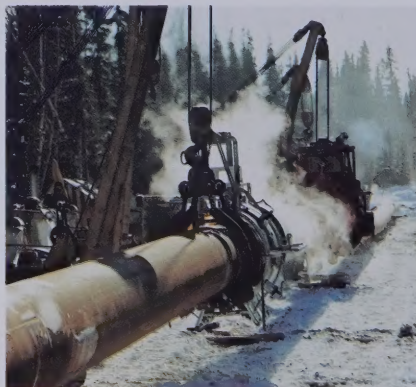
*Banister's Model 7-10 Arctic ditcher excavates a trench seven feet wide by ten feet deep through permafrost.*



*Excavating ditch during pipeline construction in Quebec for Gaz Inter-Cite.*



*Banister developed and perfected methods for welding in extremely cold temperatures.*



*Preheating pipe prior to coating during winter construction.*

One innovation for winter pipeline construction which remains unique to the company is the Model 7-10 Ditcher. Designed, built, and patented by Banister, the 7-10 can dig a trench 7 feet (2.13 m) wide by 10 feet (3.05 m) deep through permafrost. The 7-10 has been tested and used extensively under winter conditions, proving itself to be the world's finest Arctic ditching machine.





*Dragline prepares ditch for a pipeline river crossing in northern Quebec.*



*Construction of a crude oil pipeline in Louisiana's Atchafalaya Basin using a shallow-water lay barge.*



*Automatic welding on the prebuild of the Alaska Highway natural gas pipeline for Foothills Pipe Lines.*

Appropriately, Banister's first pipeline project outside Canada involved winter construction. In 1966 the company entered the U.S. pipeline market by building a pipeline in Alaska. Banister subsequently double-jointed 1,022 km (635 miles) of 1,219 mm (48-inch) pipe for the Trans Alaska Pipeline System. Another major Alaskan project was construction of 109 km (68 miles) of 168 to 1,067 mm (6 to 42 inch) pipe for Atlantic Richfield's North Slope gathering system.

Banister has also completed a number of major pipeline projects in other areas of the United States. These include 114 km (71 miles) of petroleum products pipeline in Virginia for Colonial Pipeline Company, 68 km (42 miles) in Louisiana for Shell Pipe Line Corporation, and 180 km (112 miles) in Oregon as part of the western prebuild of the Alaska Highway Gas Pipeline.

One of the more unusual projects carried out by Banister was construction of a crude oil line across the Atchafalaya Basin in southern Louisiana. Ninety kilometres (56 miles) of 914 mm (36-inch) concrete-coated pipe were welded and lowered in from a shallow-water lay barge. This project was for the U.S. Department of Energy as part of the Strategic Petroleum Reserve Program.



*Sidebooms lowering in a 914 mm (36-inch) natural gas line in Ontario.*







## Canada/Alaska

Major projects completed by Banister  
to the end of 1985.

- Pipelines
- ▲ Gathering Systems
- Distribution Systems
- + River Crossings
- Testing and Replacements
- Plant Construction
- Special Engineering Studies





## Middle East

Major projects completed by Banister to the end of 1985.

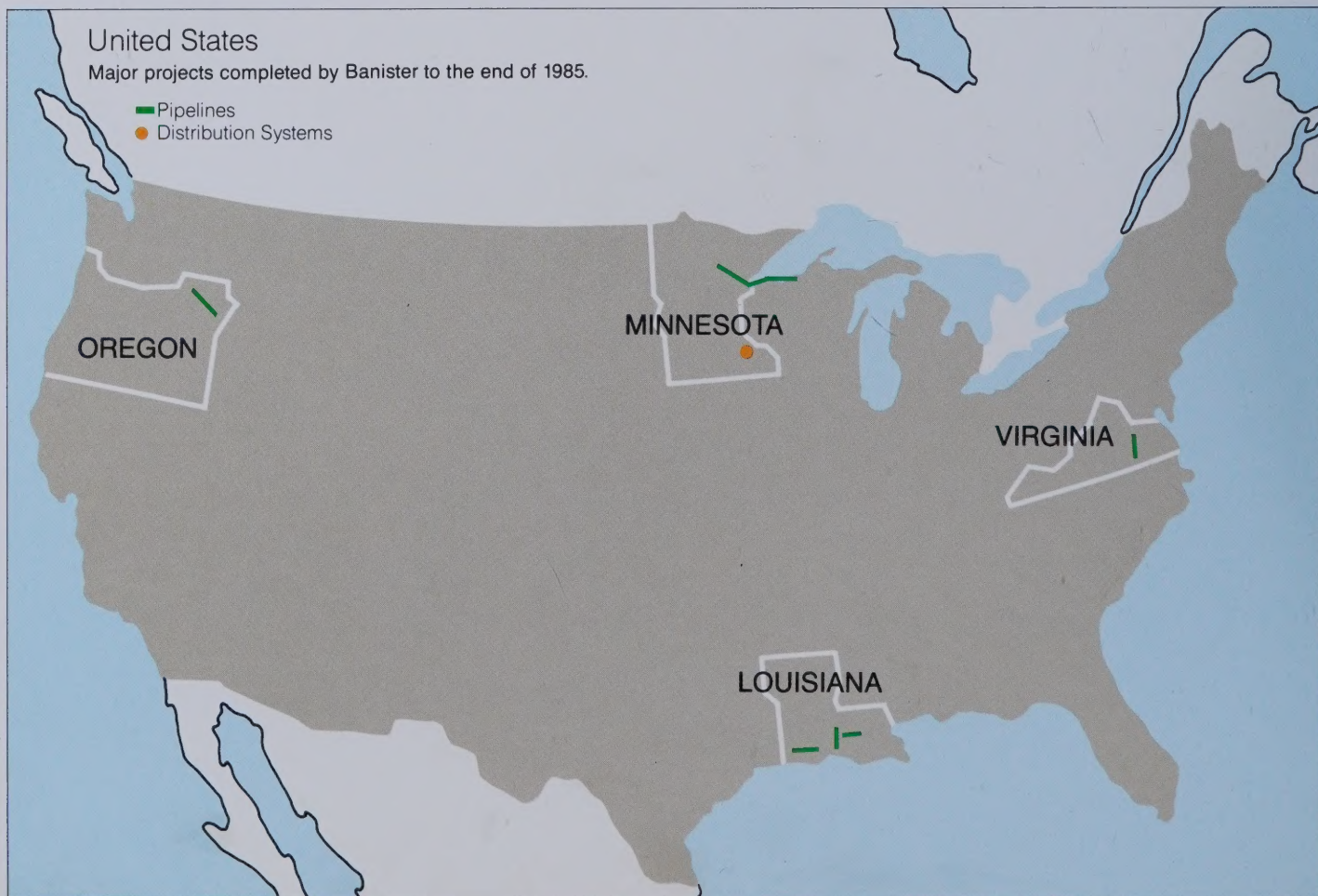
- Pipelines
- + River Crossings



## United States

Major projects completed by Banister to the end of 1985.

- Pipelines
- Distribution Systems





In 1975 Banister expanded its operations to the Middle East. The company's ability to adapt construction techniques to extremes of temperature was again demonstrated, this time in a desert climate. Banister completed several projects through joint ventures in Iraq, the largest being a 346 km (215-mile) crude oil pipeline to the Iraqi-Turkish border. Banister also carried out a number of pipeline river crossings in Iraq, including crossings of the Euphrates and North and South Tigris Rivers.



*Welding crew on Iraqi pipeline project.*

Over the years Banister Pipelines has completed approximately one hundred and fifty major river crossings in Canada, the United States, and the Middle East. The longest of these was an oil pipeline crossing of the 1.2 km (.75 mile) wide Mackenzie River in the Northwest Territories. River crossings are important links in major pipeline projects, and each is unique due to variations in soil conditions, terrain, and the width and velocity of the river. Innovative construction methods and equipment have become a Banister trademark.



*Barge-mounted dragline prepares trench for a pipeline crossing of the Euphrates River in Iraq.*



*Banister Pipelines' reputation has been built on quality workmanship and on-time, on-budget completion. Following are major pipeline projects successfully completed by Banister during recent years:*

COMPLETION DATE	LOCATION	DESCRIPTION	CONTRACT AMOUNT (\$ Millions)	CLIENT
1985	Granby/Drummondville Quebec, Canada	106 km of 114 - 324 mm natural gas pipeline	14.0	Gaz Inter-Cite Quebec Inc.
1984	Grand Mere/Le Tuque, Quebec, Canada	108 km of 406 mm natural gas pipeline	42.0	Gaz Inter-Cite Quebec Inc.
1982	Saskatchewan/Manitoba, Canada	151 km of 1,219 mm mainline, natural gas pipeline	49.0	TransCanada PipeLines
1982	Renfrew, Ontario, Canada	184 km of 914 mm mainline, natural gas pipeline	110.0	TransCanada PipeLines
1982	St. Eustache, Quebec, Canada	26 km of 508 mm and 762 mm mainline and lateral construction	12.9	Trans Quebec and Maritimes Pipelines
1981	Pendleton and La Grande, Oregon, USA	180 km of 610 mm and 762 mm natural gas pipeline	30.0	Northwest Pipeline Corporation
1981	Claresholm, Alberta, Canada	125 km of 914 mm natural gas pipeline	14.0	Foothills Pipe Lines (Alta.)
1978	Louisiana, USA	90 km of 914 mm crude oil line (lay barge operation)	27.0	U.S. Strategic Petroleum Reserve, Department of Energy
1977	Iraq	346 km of 1,016 mm oil pipeline (Iraq-Turkey pipeline)	49.2	Mannesmann Export AG
1976	Prudhoe Bay, Alaska, USA	109 km of 168 - 1,067 mm, Prudhoe Bay East gathering system	38.5	Atlantic Richfield Pipeline
1976	Kingston, Ontario, Canada	300 km of 762 mm oil transmission line	23.2	Interprovincial Pipe Line
1975	Fairbanks and Valdez, Alaska, USA	1,022 km of 1,219 mm double jointing in two plants	28.4	Alyeska Pipeline Service
1975	Iraq	290 km of 712 mm crude oil pipeline	22.0	Elf - Iraq/Spie Batignolles
1974	Iraq	300 km of 273 mm, 457 mm, and 1,219 mm crude oil pipeline	20.0	SCOP/Mannesmann
1974	Ontario, Canada	220 km of 406 mm and 610 mm natural gas transmission loop line	12.6	TransCanada PipeLines



Banister Pipelines was founded in 1948 by Ronald K. Banister. A Canadian contractor, Banister Pipelines has worked throughout North America and in the Middle East.

Banister Pipelines is wholly owned by Banister Continental Ltd., the parent company of the Banister Construction Group. It is headquartered in Edmonton, Alberta at the corporation's head office.

The Banister Construction Group's diversified capabilities include pipeline, heavy civil, marine, industrial, and underground utility construction.

**Banister Pipelines**

9910 - 39 AVENUE  
P.O. BOX 2408  
EDMONTON, ALBERTA  
CANADA T5J 2R4

PHONE: (403) 462-9430  
TELEX: 037-2380  
TELECOPIER: (403) 463-7966





# Banister

Construction Group

*"Building Strength"*